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MICRONUCLEUS TEST IN *VICIA FABA* ROOT TIPS TO DETECT MUTAGENIC EFFECT OF AQUEOUS EXTRACT OF SOME VEGETABLES

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ABSTRACT

In the present study aqueous extract of eight vegetable obtained from local market were tested for their mutagenic potential by using *Vicia faba* root tip micronucleus assay. Mutagenic potential of the extracts was evaluated by scoring micronucleus in the root tip cells of treated roots. Roots were treated with 100, 250 and 500 g/L of the extract of each vegetable at room temperature in dark for 6, 12, 18 and 24h. Extract of all the samples induced significant ($P < 0.05$ and/or 0.01) level of mutagenic effect at one or more doses. The results indicate presence of mutagenic/genotoxic compounds which may be either residues of pesticides used for crop protection or chemicals present naturally in the in the vegetable samples.

Keywords: Mutagenicity, Genotoxicity, Vegetable Extracts, *Vicia faba*, Micronucleus

INTRODUCTION

Vegetables constitute an important component of Indian diet both in terms of quantities consumed and nutritional value as majority of Indians are vegetarian, with per capita consumption of 135 g per day. Due to presence of many essential components of the diet such as proteins, vitamins, minerals and other nutrients which are usually in short supply, the vegetables occupy an indispensable place in our food. Besides these bio-chemicals, the moisture, fibre and ash contents, and the energy values of individual vegetable and plant species have also been regarded of importance to human health. They are highly recommended because they have a relatively high nutritional value and their consumption gives diversity to daily food intake.

Due to indiscriminate use of agrochemicals particularly pesticides, the safety of vegetables as a source of food has been a major public concern worldwide. The